DOCUMENT RESUME

ED 101 775 JC 750 128

AUTHOR McNutt, Dorothy E.
TITLE A Comparison of Academic Achievement Between Cooperative Education Students and Non-Cooperative Education Students at College of the Mainland.
PUB DATE Dec 74
NOTE 22p.; Practicum presented to Nova University in partial fulfillment of the requirements for the Doctor of Education degree

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS *Academic Achievement; *Business Education; *Cooperative Education; Grade Point Average; *Junior Colleges; *Literature Reviews; Student Motivation; Work Experience Programs; Work Study Programs
IDENTIFIERS *College of the Mainland

ABSTRACT

College of the Mainland (COM) has supported a cooperative education program for business majors since 1969. This program is a one-, two-, or three-semester plan that offers a student work in the community during his studies at COM. Each of the three co-op courses offers four hours credit for exploratory, career preparatory, or career retraining or enrichment objectives. The program is intended to complement and broaden the goals of formal academic and vocational preparation and to give the student an understanding of the interrelatedness of college study and daily life experiences. Each COM cooperative education student participates in the design of his own individual goals and objectives and in the design of his own achievement strategy. This document describes the cooperative education program at COM, reviews research pertaining to cooperative education in general, and describes a study comparing COM co-op and non-co-op students' mean GPAs in two courses. The mean GPA in Business Communications 231 and Business Psychology 231 for business majors completing at least one co-op course prior to or concurrent with enrollment in these courses was significantly higher than the mean GPA in the same courses for business majors who never took a co-op course. (DC)

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

ED101775

A COMPARISON OF ACADEMIC ACHIEVEMENT BETWEEN COOPERATIVE EDUCATION STUDENTS AND NON-COOPERATIVE EDUCATION STUDENTS AT COLLEGE OF THE MAINLAND

by

Dorothy E. McNutt, M. Ed.

College of the Mainland

A PRACTICUM PRESENTED TO NOVA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

December 12, 1974

JC 750 128

TABLE OF CONTENTS

STATEMENT OF PROBLEM 1

HYPOTHESIS 1

BACKGROUND AND SIGNIFICANCE OF STUDY 1

DEFINITION OF TERMS 10

LIMITATIONS OF STUDY 11

BASIC ASSUMPTIONS 11

PROCEDURES FOR COLLECTING DATA 12

TREATMENT OF DATA 13

RESEARCH RESULTS 13

CONCLUSIONS AND SIGNIFICANCE OF THE RESEARCH 13

RECOMMENDATIONS 15

ABSTRACT 17

BIBLIOGRAPHY 18

A COMPARISON OF ACADEMIC ACHIEVEMENT BETWEEN COOPERATIVE EDUCATION STUDENTS AND NON-COOPERATIVE EDUCATION STUDENTS AT COLLEGE OF THE MAINLAND

Statement of Problem

Research on traditional cooperative education programs (university model of alternating periods of employment with periods of work) indicates that the cooperative education experience correlates significantly with overall grade point average (GPA) for students (Smith, 1973. Knowles, 1971. Wilson, 1961.) Research of the more contemporary cooperative education models emerging from community colleges in the last four to five years is limited. Community colleges may offer more flexibility in work/study plans than universities have evidenced. College of the Mainland (COM) has supported a cooperative education program for business majors since 1969.

Comparisions of COM co-op and non-co-op students' mean GPA in two courses was made. The population was limited to those students majoring in business. An answer to the following question was found: Is the mean GPA of cooperative education students significantly higher than the mean GPA of non-cooperative education students in the Division of Business at College of the Mainland?

Hypothesis

The author proposed that cooperative education students' mean GPA for Business Communications 231 and Business Psychology 231 was significantly higher than non-co-op students' mean GPA for the same courses.

Background and Significance of Study

Historically, cooperative education began in 1906 as an experimental program in the School of Engineering of the University of Cincinnati by

Herman Schneider The basic concept was one of alternating on-campus study and off-campus work. Since 1946 the growth of cooperative education in other areas, such as business administration, liberal arts, and education, has been instrumental in its accelerated development. By 1960 the number of baccalaureate institutions operating cooperative education programs had increased to 61. Ten junior community and technical colleges had established cooperative programs by this date, bringing the total number of programs to 71 (Collins, 1970).

A research study published in 1961 by Dr. James W. Wilson, sponsored by a grant from the Fund for the Advancement of Education, and directed by Dr. Ralph W. Tyler appraised the major aspects of cooperative education and compared students and graduates in cooperative programs with those whose education did not include a systematic coordination of work and study experiences. The study recommended that cooperative programs be widely expanded to include many more colleges and universities as co-op had proved to be a superior form of education (Wooldridge, 1973).

Cooperative education can be a powerful agent of change not only for the student but for the institution as a whole. Arthur Cohen states: "There must be purpose or there can be no organized process of education, and the underlying purpose of all education, formal or informal, is to bring about change in students." (Dawson, 1973). The Carnegie Commission on Higher Education and the Newman Task Force Reports encourage greater utilization of non-classroom experiences and the reduction of academic time in college classrooms. Within this decade, the National Commission for Cooperative Education, with funds from the Kettering Corporation and the Ford Foundation, has more than doubled the number of institutions offering cooperative education. Strong public support in the form of Federal legislation and funding for initiating and strengthening programs in cooperative education is in

evidence (USOE, 1973). From 1962 to 1972 the number of colleges and universities having some form of cooperative education has grown from 60 to 350 (Dawson, 1973). Dr. Edward S. Lewis, past president of the Cooperative Education Association, stated that nearly 90,000 students were enrolled in cooperative education in 1973. These students were earning a gross income of $280,000,000 per year and were placed with approximately 5,000 employers both in the U.S.A. and overseas (Lewis, 1972).

With this increased interest and growth in cooperative education have emerged many new and varied forms of experienced-based education. This form of education provides distinct gains in knowledge, some of which are definable and measurable and some of which are not. Cooperative education cannot claim ownership for all the special kinds of learning experiences designed to effect a more immediate translation of theoretical learning. Whether it is called internship, preprofessional practice, interlude period, university without walls, or cooperative education, there are restrictions and limitations as to what can be expected or what can be accomplished. The real thrust should be to complement and broaden the goals of formal academic and vocational preparation. The work experience, the job, in cooperative education is central, but in such a way as to assign meaning to the other studies that students follow. In the community college the co-op coordinators with faculty support can assist each student to gain a very real appreciation for the interrelatedness of college study with other life experiences, whether of a personal, social, or career nature.

Perhaps the most noteworthy research in the past 16 years has been authored by Wilson and Lyons and published in a book entitled, "Work-Study College Programs." From this study evolved a listing of differences in the values gained by students under cooperative and non-cooperative programs.

Significant differences in values that are pertinent to this study are as follows:

1. By coordinating work experience with the academic program, theory and practice are more closely integrated and students find greater meaning in their studies.

2. The coordinating of work and study increases student motivation.

3. For many students, work experience contributes to a greater sense of responsibility for their own efforts, greater dependence of their own judgments, and a corresponding development of maturity.

4. By working with others who come from a variety of backgrounds, most students in cooperative education develop greater understanding of other people and greater skills in human relations (Collins, 1973).

In a research project at the University of Cincinnati in the College of Business Administration, Dr. George J. Gore drew comparisons of students who pursued either a full-time academic program similar to a non-co-op institution or participated in the professional practice programs covering a 5-year work and study academic career. Information for the study came from graduates completing identical academic programs; pursuing courses at exactly the same times; scheduling particular classes; participating in specific academic subjects--all without identification to the faculty as to their cooperative or non-cooperative work experience. Thus, the particular universe used as a data base for the study had the advantage of as identical an education experience environment as is possible with the one exception of "professional practice" assignments in alternating quarters.

The data from this survey suggests that those students who had accumulated a higher GPA began at a significantly higher salary level than others. The data indicates that it is the monetary compensation that seems in direct correlation with GPA's; i.e., moving from a GPA of 2.5 to a GPA of 4.0, the median salary moves from $591 per month to $700 per month, with the mean starting salary of $592 for a GPA of 2.5 to $718 for a GPA of 4.0. The median

starting salaries were identical and the mean variation was statistically insignificant from $623 for co-ops to $527 for non-co-ops. Thus, the value of high GPA, whether for co-ops or non-co-ops, is increasingly significant when measured for monetary remuneration (Gore, 1972).

In another report by Doctor Gore (1973), both co-op and non-co-op graduates were interviewed in order to assemble a profile of those students graduating from the University of Cincinnati from 1964-1969. From the overall conclusions two findings are significant to the background of information for this study:

1. Almost without exception, the emphasis on personal resume value was associated with work experience while in school, followed by academic GPA.

2. One out of three indicated that their co-op work experience was of direct value in obtaining their first position. Invariably, they felt it aided their GPA. They were strongly positive about the co-op experience and would encourage others to consider the experience.

Carolyn D. Kany (1973), Research Associate in Cooperative Education at Northeastern University, has reported in a pilot probe entitled "Meanings of Work to Women Students in a Cooperative Education Program" that the importance of cooperative work experiences has a positive influence on women's career commitments and identity. That is to say, cooperative education appears to lessen the hazards of identification crises in the classroom; thus enabling the woman to be more internally motivated, nearer to self-actualization, more in-control of her environment, and more oriented.

Various researchers have hypothesized that participation in a cooperative program should favorably influence academic performance. Using entrants into the Virginia Polytechnic Institute, for the year 1959, Smith compared the performance of 85 cooperative education students with 95 full-time students of engineering. By comparison of the grade index, as the two groups progressed

through the course, an improvement was found in the cooperative education students. The difference, however, was significant only at the .20 level (Smith, 1965).

Lindenmeyer, using Smith's analysis as a basis, carried out similar work at Northwestern University Technological Institute. Apart from the changes in grade index level, both researchers found that the cooperative education students as a group, had a lower percentage failure and lower attrition, and that the improvement, in all areas was most noticeable in the academically lower half of the group (Lindenmeyer, 1967).

Swinburn College of Technology in Australia strongly supports cooperative education and is committed to the encouragement of its development (Davie, 1974). By considering the academic performance of co-op students from 1963 to 1971 Dr. Robert S. Davie and associates undertook a systematic study of the cooperative education program to determine if a change in academic performance could be found from an analysis of results obtained from a questionnarie administered to cooperative education students and ex-students. The study revealed that the performance by the cooperative education students, in terms of passing subjects, had improved following industrial experience. This improvement showed both by comparison with the earlier performance of the same students, and by comparison with the performance of similar full-time students. The report noted that following the experience, the number of subjects passed out of the total had improved and that this result was significant at better than the .05 level.

In January, 1974, Fresno City College sponsored a study by Gilbert Peart to explore certain aspects of the cooperative education program. An 80.6 percent return of the questionnaires from students enrolled in the Work Experience classes revealed that 71 percent of the respondents agreed that

gaining a better understanding of the relationship between classroom theory and practical application was one of the most valuable phases of the Work Experience Program (Peart, 1974). In descending order of frequency, items descriptive of benefits gained from the cooperative experience were ranked by Peart. Of the 398 students who completed the questionnaire, 178 felt that co-op made their college classes more meaningful, and 233 felt that they had gained a greater appreciation of learning and performance objectives.

In a more current quasi-experimental study conducted by McNutt and Herman, the number of hours worked and the number of miles appears to have some effect on the success of COM students surveyed in the Fall, 1973. A multivariate analysis indicated that two items, number of hours worked per week and distance traveled, were significantly correlated with GPA (McNutt, 1974). Over 72 percent of COM students were employed on- or off-campus; and with a high correlation between hours worked and GPA, the implications are that employed students are more likely to be successful students.

The first year of college GPA has traditionally been used as an intermediate criterion of college success. GPA is a convenient objective measure and acceptable in academic circles as an indicator of success through mastery of learning in any one or all of the following domaines: cognitive, affective, psychomotor. Factors affecting success or non-success, reflected through GPA, are especially important to college faculty and administrators. Secondary findings in the McNutt and Herman study emphasized the importance of social class, value systems, expectations, and the relationships of these with school and work success. In addition, personality factors affecting success and non-success were found to be stability of personality characteristics, feelings of self-worth, personal envirnomental presses, internal and external motivational factors, attitudes and feelings of self-esteem, and personal aspirational levels (McNutt, 1974).

Cooperative education at COM was designed as a vehicle for discovery and reinforcement of those personality factors affecting students' success. In our culture the central means of proving one's worth is through successful achievement in work; thus, cooperative education at COM capitalizes on this widely held value and offers the student an opportunity to gain self-esteem through work experience. This "learning a living" model for education can also maximize the more intangible, yet equally as important, growth in terms of cognitive and affective development, interpersonal relations and the ongoing emergence of a self-concept. Instead of leaving learning to the minimally controlled environment of a "work station," co-op at COM, an experimental and innovative institution, insures that the exposure to related work and the actual experience of the employment can be assiduously integrated with the curriculum.

An instructional model facilitating this integration has been implemented at COM in the Division of Business since 1969 through a systems approach to learning. A reality check was made prior to course planning through advisory committees composed of employers, universities, the community, administrators, faculty and students. The philosophy of cooperative education at COM was formulated, and the rationale and values assembled.

Students are recruited and their previous work, study and life experiences assessed. After job placement, the student, his coordinator, the employer and a faculty consultant write behaviorally specified objectives encompassing a wide-range of cognitive, affective or psychomotor skills with a long-range goal of affecting the student's personal growth. Learning activities both on-the-job, in the community, and in the classroom enable the student to achieve his objectives; but also, the coordinator, employer and faculty consultant measure his progress. At the end of each co-op experience, the

student and the coordinator evaluate the total experience. Other groups contributing to the on-going revision of the co-op courses are employers, administrators and community advisory committees. The student's development along personal, intellectual and career lines remains the thrust of cooperative education at COM, but that development is measurable and co-op becomes accountable for what it does.

In 1971 a follow-up study of both co-op and non-co-op business graduates was made by the author. The study indicated that more co-op graduates continued their education at the four-year university/college and worked in their career choice than did non-co-op graduates. The significance of this study was that cooperative education graduates were more successful than non-co-op graduates.

Faculty and administration have questioned the value of cooperative education and expressed concern that co-ops may tend to neglect their on-campus course objectives after assignment to an off-campus work station. This study has served to test their concerns.

In 1973, as a result of USOE funding, the Greater Galveston-Houston Community College Consortium was funded under a Title IV-D grant of $70,000. This grant enabled seven community colleges to conduct a feasibility study to determine if co-op should be an option for all students on these campuses. In 1974 additional monies amounting to $110,000 was awarded by the USOE under another Title IV-D grant to the community colleges for the purpose of implementing a cooperative education program for all students on each campus. COM opened the co-op experience to all students in July, 1974.

At COM the value of cooperative education is not in its separateness from on-campus activities, but in its capacity to complement and broaden the goals of formal academic and vocational preparation. By complementing those goals, the student gains an understanding of the interrelatedness of college study

with daily life experiences. By broadening these goals, the student personalizes education to fit his longer term personal and career goals. As a by-product, the discovery of his "marketability" and the necessary improvement of personal or professional qualities becomes evident.

The challenge is to seek new ways to help students to take responsibility for their own human development, to create new social understandings and to develop skills and goals necessary for the evaluation of the democratic life through cooperative education.

Definition of Terms

Grade Point Average (GPA) - For the purpose of this study, GPA was calculated on a minimum of 6 semester credit hours. The grade of A received 4 points; B, 3 points; C, 2 points; and WI, 0 points.

Cooperative Education (Co-op) - At COM cooperative education is a one-, two-, or three-semester plan that offers a student work in the community during his studies at the College. Each course (Co-op 241, 242, 243) offers four hours credit for exploratory, career preparatory or career retraining or enrichment objectives. The alternating, parallel, or extended-day plan may be chosen by the student, with the option of receiving pay or no pay for his work. (See Appendix)

The Alternating Plan - Two students hold one full-time job by alternating terms of work and study.

The Parallel Plan - Each student works a minimum of 15 hours a week while attending college.

The Extended-Day Plan - Each student works full-time while attending evening school.

Business Communications 231 - Study of processes and media utilized in effective oral and written communication. Emphasis on the principles of functional communication; correct, forceful language usage; and sound practices leading to effective communication.

Business Psychology 231 - Study of psychological principles as applied to human relations in business and industry. Emphasis on group dynamics, working environment, motivation, and supervision.

Population - All business students enrolled at COM for 1971-74.

A. Experimental group - All business students completing a minimum of one co-op course previous to or concurrent with enrollment in Business Communications 231 and Business Psychology 231 between 1971-74.

B. Control group - All non-co-op students enrolling in Business Communications 231 and Business Psychology 231 between 1971-74.

Sample Size - A minimum of 21 students randomly drawn from each of the above groups.

Independent Variable - The enrollment in a minimum of one cooperative education course.

Dependent Variable - The students' mean GPA in Business Communications 231 and Business Psychology 231.

Limitations of the Study

The experimental and control groups of students were randomly selected. The author submits that there were exogenous variables that are neglected by the randomness of the sample that affected the success or nonsuccess reflected through GPA. These noncontrollable variables included the inequitable representations of sex, ethnic groups, marital status, and financial condition. Some students were volunteer co-ops. Since the cooperative education courses are not mandatory for completion of any program, with the exception of the mid-management program, the sample may be biased. The assumption is that as a volunteer the student is motivated to succeed (Barton, 1974). Although utilizing two courses to determine GPA data may limit the significance of the research, the outcomes should prove indicative of the effect of co-op experience on GPA. Since organizational and human environments in the two classes change each semester, changes in classroom environments alone will cause changes in students' behaviors, interests, and responsiveness; thus leading to different levels of achievements and motivations and final success or nonsuccess reflected in grades.

Basic Assumptions

1. A more divergent population is possible with COM students originating from five district high schools and local public and private enterprises.

The population has a wide range of ages, composed of freshmen or sophomores, who have a broad background and diversification of work and life experiences.

2. The sample represents a cross-section of the College community.

3. COM students enrolled in the Division of Business are similar to other community college students across the Nation.

4. Students enrolled in COM co-op courses are similar to other co-op students enrolled in community colleges across the Nation.

5. Business Communications 231 and Business Psychology 231 incorporate more diversified, broader objectives from all learning domains--psychomotor, cognitive and affective--than any other two courses at COM; thus requiring students to demonstrate a wider range of abilities and to receive evaluation on those abilities through grades.

6. There are variations in abilities and attitudes among students which individually flavor each work experience.

7. Co-op programs have a wide range of quality jobs as well as quality students.

Procedures for Collecting Data

The population of business students was drawn from a 237 square mile area, the COM District. Grade lists from 1971-74 for Business Communications 231, Business Psychology 231, and Cooperative Education 241 were obtained from the Office of Admissions. Grade lists were then compared to determine those students enrolling in cooperative education concurrent or previous to enrolling in the psychology and communications courses. To confirm that all students chosen were business majors, a final tally against the Majors List, located in the office of the Dean of Student Personnel Services, was made. A random sample for establishing the experimental and control groups was made. Each sample contained 21 students. GPA for the psychology and communications courses was calculated for each student in the control and experimental groups. The mean GPA for co-op and non-co-op students enrolled in the two courses was determined.

Treatment of Data

The mean GPA and standard deviation for co-op and non-co-op groups enrolled in the two courses was determined.

A t-test at the .05 level of significance involving the mean GPA of all students in the experimental and control groups, was executed. A critical t-value of 1.684 was applied to a one-tailed test.

Research Results

The null hypothesis was that there was no significant difference between the mean GPA of cooperative education students and the mean GPA of non-cooperative education students. The null hypothesis is rejected. As shown in Table 1, the calculated t-value exceeded the critical t-value. The mean GPA in Business Communications and Business Psychology for cooperative education students is significantly higher than the mean GPA in the same courses for non-cooperative education students.

Table 1. A t-Test of Significant Differences Between Cooperative Education Students Mean GPA and Non-Cooperative Education Students Mean GPA

Groups	$\bar{x}$	sd	N
Control	2.666	.69611	21
Experimental	3.095	.61582	21

Critical t = 1.684
Calculated t = 2.1152
df = 40

Conclusions and Significance of the Research

This research reaffirmed the findings of the Wilson and Tyler study of 1961, the Gore study of 1973 and the Davie study of 1974. The uniqueness of

this study is that the model of the learning system for the cooperative education experience was different from previously tested models; i.e., each COM cooperative education student participated in the design of his own individual goals and objectives and a strategy for achieving these. In addition, previous studies had not measured the effect of the co-op experience on business students enrolled in a community college. Therefore, the author concludes that evidence presented in this study does suggest that participation in the COM cooperative education course had a favorable influence on the academic performance of the group of co-op students whose records were examined.

Since the mean GPA of these co-op students was significantly higher than the mean GPA of non-co-op students, those students enrolling in the newly-approved all-college cooperative education courses may realize an improved GPA or will suffer no loss of GPA as a result of the cooperative education experience. Increased support from COM administrators and faculty should prevail after their review of the findings of this study. Prospective co-op students' parents may be less concerned about the pre-supposed negative effect of work and travel on academic performance, if apprised of the findings of this study and the current 1974 McNutt and Herman research.

The new grant application filed with the USOE under Title IV D in November, 1974, contained a paragraph from this study describing the significance of the COM cooperative education experience and its influence on students' GPA. Perhaps, this statistical evidence of the positive effect of the cooperative education experience on students' GPA will bring COM additional Federal money for the expansion and enrichment of the all-college cooperative education program.

A vehicle for informing co-op employers and co-op schools of the results of this study will be the Cooperative Education Journal. An article will be written for the Journal that has nation-wide coverage. The emerging cooperative education programs at other community colleges should benefit from the findings of this study through the verification of the positive effect of cooperative education on students' mean GPA.

Recommendations

As a result of this study, the author recommends that

1) A copy of this study be submitted to the community college representative of the Coordinating Board in Texas. The Board is currently considering cooperative education as a credible course worthy of funding; however, the Board's decision is pending further investigation of the goals, objectives and outcomes of cooperative education. The results of this research, coupled with the model of the learning system designed by the author for cooperative education, should serve to establish a framework for a positive recommendation concerning funding and accreditation.

2) News releases to local papers as well as student publications be composed to inform students, parents and employers of the cooperative education program and its advantages.

3) A more vigorous effort be made by the administration and faculty to advise students at COM to enroll in cooperative education.

4) A further study of administration and faculty attitudes toward cooperative education at COM be conducted before the end of the 1975-76 school year .

5) A follow-up study of cooperative education graduates and non-cooperative education graduates be made in the Spring, 1975, for a comparison of the success of both in two areas--career and continuing education.

6) Chairpersons in major divisions of the College coordinate their efforts to provide viable schedules with blocks of off-campus time each semester for those students enrolling in cooperative education.

7) Further research be designed to seek additional reasons or explanations for the cooperative education students' high success rate in academia.

Abstract

A comparison of COM cooperative education and non-cooperative education students' mean GPA in two courses--Business Communications 231 and Business Psychology 231--was made. The population was limited to those students majoring in business. A random sample for establishing the experimental and control groups was made. A t-test with a critical t-value of 1.684 and a df of 40 was applied to a one-tailed test. The calculated t-value exceeded the critical t-value; thus, the mean GPA for cooperative education students was significantly higher than the mean GPA in the same courses for non-cooperative education students at the .05 level of significance.

BIBLIOGRAPHY

Barton, George M., Dean of Instruction, Nova University, Houston, Texas, Lecture, Applied Educational Research and Evaluation Module, Oct., 1974.

Collins, S. B., A Directory of Cooperative Education: Its Philosophy and Operation in Participating Colleges in the United States and Canada. Philadelphia; Cooperative Education Association, Drexel University, 1970.

Collins, Stewart B., "Cooperative Education--Promises and Pitfalls," Journal of Cooperative Education, Vol, IX, No. 2, May, 1973.

Davie, Robert S., et al, "Academic Performance and Work Experience An Australian Cooperative Education Experience," Journal of Cooperative Education, Vol. X, No, 2, May, 1974.

Dawson, Dudley, "College Goals for Cooperative Education," Journal of Cooperative Education, Vol. X, No. 2, May, 1973.

Gore, George J., "Co-op Versus Non-Co-op Revisited," Journal of Cooperative Education, Vol. IX, No. 1, November, 1972.

Gore, George J., "Value of Co-op Education as the Graduate Views It," Journal of Cooperative Education, Vol. IX, No. 2, May, 1973.

Heerman, Barry, Cooperative Education in Community Colleges. San Francisco: Jossey-Bass, Inc., 1971.

Heineman, Harry N., "La Guardia Community College: Where All The Students Intern," Community and Junior College Journal, Vol. 45, No. 3, Nov., 1974.

Knowles, Asa, et al, Handbook for Cooperative Education. San Francisco: Jossey-Bass, Inc., 1971.

Lentz, Glenda, et al, "Co-op Versus Regular Student Attitudes," Journal of Cooperative Education, Northeastern University Clearinghouse, 1973.

Lewis, Edward S., "In Retrospect," Journal of Cooperative Education, Vol. IX, No. 1, November, 1972.

Lindenmeyer, Roy S., "A Comparison of the Academic Progress of the Cooperative and Four-Year Student," Journal of Cooperative Education, Vol. III, April, 1967.

Lupton, Keith and McNutt, Dorothy E., "Academic Credit for Cooperative Education," Journal of Cooperative Education, Vol. IX, No. 1, Nov., 1972.

McNutt, Dorothy E., A System Design for the Cooperative Education Program at College of the Mainland Incorporating Behaviorally Specified Objectives for the First Off Campus Experience. Texas City, Texas, College of the Mainland, April, 1974.

McNutt, Dorothy E. and Herman, Thomas, Development of a College of the Mainland Student Profile. Texas City, Texas, College of the Mainland, September, 1974.

McNutt, Dorothy E. and Poth, Richard L., "A Frontier Yet Explored--Are We Ready?" Journal of Cooperative Education, Fall, 1974.

Peart, Gilbert, "A Survey of the Cooperative Work Experience Education Program Fresno City College," Journal of Cooperative Education, Vol. X, No. 2, May, 1974.

Rodes, Harold, "The After Effects of Cooperative Education," Journal of Cooperative Education, Northeastern University Clearinghouse, 1973.

Smith, H. Stuart, "The Influence of Participation in the Cooperative Education Program on Academic Performance," Journal of Cooperative Education, 1965.

USOE, Guidelines for Title IV D, Washington, DC, 1974.

Wilson, James W., Cooperative Education, Tool for Education, Northeastern University, Boston, Mass., 1970.

Wilson, James W. and Lyons, Edward H., Work-Study College Programs: Appraisal and Report of the Study of Cooperative Education. New York: Harper and Rowe, 1961.

Wooldridge, Roy L., "Cooperative Education Today: A Reassessment," Journal of Cooperative Education, Vol, IX, No. 2, May, 1973.

UNIVERSITY OF CALIF.
LOS ANGELES

MAR 14 1975

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION